WHAT IS CLAIMED IS:

Rule 126

26. A tyre for a wheel of a vehicle, comprising:

a toroidal carcass provided with axially opposite sidewalls and beads for anchoring the tyre to a rim of the wheel;

a tread band disposed crownwise on the carcass, comprising a surface with a plurality of hollows and grooves defining a raised tread pattern; and

a belt structure interposed between the carcass and the tread band, axially extending between the sidewalls,

wherein the tread band comprises at least first and second circumferential axially-contiguous portions, wherein the first portion is formed of a first composition comprising a reinforcing filler having at least 40%-by-weight carbon black and at least some white filler, a second portion is formed of a second composition comprising a reinforcing filler having at least 20%-by-weight white filler, and the first composition is different from the second composition, and wherein a difference of compositions between the at least first and second portions achieves a tyre operating temperature lower than a reference temperature.

27. A tyre for a wheel of a vehicle, comprising:

a toroidal carcass provided with axially opposite sidewalls and beads for anchoring the tyre to a rim of the wheel;

a tread band located crownwise on the carcass, comprising a surface with a plurality of hollows and grooves defining a raised tread pattern; and

a belt structure interposed between the carcass and the tread band, axially extending

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between the sidewalls,

wherein the tread band comprises at least first and second circumferential axially-contiguous portions, wherein the first portion is formed of a first composition comprising a reinforcing filler having at least 40%-by-weight carbon black, the second portion is formed of a second composition comprising a reinforcing filler having at least 20%-by-weight white filler, and the first composition is different from the second composition, wherein the second composition further comprises an amount of white filler greater than an amount of white filler in the first composition, a difference between the two amounts of white filler being at least equal to 20% of the amount of white filler in the second composition, wherein a difference of compositions between the at least first and second portions achieves a tyre operating temperature lower than a reference temperature, and

wherein the at least first and second circumferential axially-contiguous portions are arranged to contact a road surface.

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28. The tyre of claim 27, wherein a volume of the portion comprising the second composition is at least 30% of a combined volume of the tread band.

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29. The tyre of claim 27, wherein a volume of the portion comprising the second composition does not exceed 80% of a combined volume of the tread band.

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30. The tyre of claim 27, wherein a width of the portion comprising the second composition is at least 25% of a combined width of the tread band.

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31. The tyre of claim 27, wherein a width of the portion comprising the second composition does not exceed 80% of a combined width of the tread band.

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32. The tyre of claim 27, wherein a width of the portion comprising the second composition is at least 50% of a combined width of the tread band.

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33. The tyre of claim 27, wherein the white filler is a silica-based reinforcing filler.

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34. The tyre of claim 27, wherein the reinforcing filler of the portion comprising the second composition is substantially free of carbon black.

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35. The tyre of claim 34, wherein the reinforcing filler of the portion comprising the second composition further comprises colored pigments.

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36. The tyre of claim 27, wherein the portion comprising the second composition is located in a central area of the tread band.

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37. The tyre of claim 36, wherein the raised tread pattern is a symmetric tread pattern.

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38. The tyre of claim 36, wherein the raised tread pattern is a directional tread pattern.

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39. The tyre of claim 36, wherein the tread band has a ratio of curvature of at least 0.15:1; wherein the ratio of curvature is a first distance divided by a second distance, wherein the

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first distance is measured along an equatorial plane of the tyre from a line passing through a first tread end and a second tread end to a tread center, and the second distance is measured along the line passing through the first tread end and the second tread end, from the first tread end to the second tread end.

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~~40~~. The tyre of claim 27, wherein the portion comprising the second composition is located adjacent an edge of the tread band.

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~~41~~. The tyre of claim 40, wherein the raised tread pattern is an asymmetric tread pattern having two axially distinct circumferential areas, comprising an inner area adapted for mounting towards a centerline of the vehicle, and an outer area adapted for mounting away from a centerline of the vehicle.

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~~42~~. A tread band for recapping used tyres, comprising at least first and second axially-contiguous circumferential portions, wherein the first portion is formed of a first composition comprising a reinforcing filler having at least 40%-by-weight carbon black, the second portion is formed of a second composition comprising a reinforcing filler having at least 20%-by-weight white filler, and the first composition is different from the second composition, wherein the second composition comprises an amount of white filler greater than an amount of white filler in the first composition, a difference between the two amounts of white filler being at least equal to 20% of the amount of white filler in the second composition, wherein a difference of compositions between the at least first and second portions achieves a tyre operating temperature lower than a reference temperature, and

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wherein the at least first and second axially-contiguous circumferential portions are arranged to contact a road surface.

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43. A method of reducing the operating temperature of a tyre on a vehicle, comprising:

forming a toroidal carcass provided with axially opposite sidewalls and beads for anchoring to a corresponding rim;

forming a belt structure located on the carcass, axially extending between the sidewalls;

selecting a first composition comprising a reinforcing filler having at least 40%-by-weight carbon black, and a second composition comprising a reinforcing filler having at least 20%-by-weight white filler, wherein the second composition comprises an amount of white filler greater than an amount of white filler in the first composition, and wherein a difference between the two amounts of white filler being at least equal to 20% of the amount of white filler in the second composition to obtain an operating temperature of the tyre lower than a reference temperature;

forming a tread band comprising at least first and second circumferential axially-contiguous portions, the first portion made of the first composition, and the second portion made of the second composition; and

forming a tyre comprising the toroidal carcass, the belt structure, and the tread band;

wherein the at least first and second circumferential axially-contiguous portions are arranged to contact a road surface.

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44. A tyre for a wheel of a vehicle, comprising:

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a toroidal carcass provided with axially opposite sidewalls and beads for anchoring the tyre to a rim of the wheel;

a tread band located crownwise on the carcass, comprising a surface with a plurality of hollows and grooves defining a raised tread pattern; and

a belt structure interposed between the carcass and the tread band, axially extending between the sidewalls,

wherein the tread band comprises at least first and second circumferential axially-contiguous portions, wherein the first portion is formed of a first composition comprising a reinforcing filler having at least 40%-by-weight carbon black, the second portion is formed of a second composition comprising a reinforcing filler having at least 20%-by-weight white filler, and the first composition is different from the second composition, wherein the second composition comprises an amount of white filler greater than an amount of white filler in the first composition, a difference between the two amounts of white filler being at least equal to 20% of the amount of white filler in the second composition, wherein a volume of the portion comprising the second composition is at least 30% of a combined volume of the tread band portions, wherein a difference of compositions between the at least first and second portions achieves a decrease in an overall temperature of the tyre on an order of 5°C or more relative to an otherwise identical tyre provided with a tread band made entirely of a composition having only carbon black as a reinforcing filler, and

wherein the at least first and second circumferential axially-contiguous portions are arranged to contact a road surface.

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45. A tyre for a motorcycle wheel, comprising:

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a toroidal carcass provided with axially opposite sidewalls and beads for anchoring the tyre to a rim of the wheel;

a tread band located crownwise on the carcass, comprising a surface with a plurality of hollows and grooves defining a raised tread pattern; and

a belt structure interposed between the carcass and the tread band, axially extending between the sidewalls, the belt structure comprising a reinforcing wrapping of metallic inextensible cord reaching circumferentially to the carcass to form a plurality of turns parallel to each other and located consecutively in a side-by-side relationship, substantially oriented along a rolling direction of the tyre,

wherein the tread band comprises at least first, second, and third circumferential axially-contiguous portions, wherein the first portion is formed of a first composition comprising a reinforcing filler having at least 40%-by-weight carbon black, the second portion is formed of a second composition comprising a reinforcing filler having at least 20%-by-weight white filler, and the third portion is formed of a third composition comprising a reinforcing filler having at least 20%-by-weight white filler,

wherein the first composition is different from the second and third compositions, wherein the second composition comprises an amount of white filler greater than an amount of white filler in the first composition, a difference between the amount of white filler in the first and second compositions being at least equal to 20% of the amount of white filler in the second composition, wherein the third composition comprises an amount of white filler greater than an amount of white filler in the first composition, a difference between the amount of white filler in the first and third compositions being at least equal to 20% of the amount of white filler in the third composition,

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wherein the second portion is located on a first side of an equatorial plane of the tyre and the third portion is located on a second side of the equatorial plane of the tyre, and

wherein the at least first, second, and third circumferential axially-contiguous portions are arranged to contact a road surface.

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~~46.~~ A tyre for a wheel of a vehicle, comprising:

a toroidal carcass provided with axially opposite sidewalls and beads for anchoring the tyre to a rim of the wheel;

a tread band located crownwise on the carcass, comprising a surface with a plurality of hollows and grooves defining a raised tread pattern; and

a belt structure interposed between the carcass and the tread band, axially extending between the sidewalls,

wherein the tread band comprises at least first and second circumferential axially-contiguous portions, wherein the first portion is formed of a first composition comprising a reinforcing filler having at least 40%-by-weight carbon black, the second portion is formed of a second composition comprising a reinforcing filler having at least 20%-by-weight white filler, and the first composition is different from the second composition, wherein a difference of compositions between the at least first and second portions achieves a tyre operating temperature lower than a reference temperature, and

wherein the at least first and second circumferential axially-contiguous portions are arranged to contact a road surface.

add B7

add C3

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